

CLAIMS

[1] A waveform equalizer comprising:

    a calculation circuit

        that permits free setting of a boost factor by which a gain, in a predetermined frequency range, for an input signal to the waveform equalizer is adjusted and

        that adjusts the gain for the input signal by varying the boost factor;

    and

    an all-pass filter

        that is connected to a stage preceding or following the calculation circuit,

        that has a first conductance amplifier and a second conductance amplifier, and

        that adjusts and thereby corrects a group delay characteristic of the input signal by varying a conductance of at least one of the first and second conductance amplifiers.

[2] The waveform equalizer of claim 1, wherein

    the all-pass filter further has

        a differentiator that is connected between input and output circuits of the first conductance amplifier and that includes a first capacitor and

        a second capacitor that is connected between an input side of the first conductance amplifier and an output side of the second

conductance amplifier.

- [3] The waveform equalizer of claim 2, wherein
  - an input voltage to the all-pass filter is fed to one input terminal of the first conductance amplifier,
  - a voltage applied to an output terminal of the first conductance amplifier is fed to one input terminal of the second conductance amplifier,
  - a voltage applied to an output terminal of the second conductance amplifier, which voltage corresponds to an output voltage of the all-pass filter, is fed to another input terminal of the first conductance amplifier and to another input terminal of the second conductance amplifier, and
  - the input voltage to the all-pass filter and the voltage applied to the output terminal of the first conductance amplifier have phases inverted relative to each other.
- [4] The waveform equalizer of one of claims 2 and 3, wherein
  - the all-pass filter
    - keeps the conductance of the first conductance amplifier constant and makes the conductance of the second conductance amplifier variable, and,
    - by varying the conductance of the second conductance amplifier, adjusts and thereby corrects the group delay characteristic of the input signal while keeping a group delay of the input signal in a direct-current range constant.

- [5] The waveform equalizer of one of claims 2 and 3, wherein
  - the all-pass filter
    - makes the conductance of the first conductance amplifier variable,
    - and,
    - by varying the conductance of the first conductance amplifier, varies a frequency range in which the group delay characteristic of the input signal is corrected.
- [6] The waveform equalizer of one of claims 1 to 3, wherein
  - the calculation circuit is built as an equi-ripple filter.
- [7] An information reproducing apparatus comprising:
  - a detector that detects information recorded on a recording medium and that then converts the detected information into an electrical signal;
  - an waveform equalizer that receives as an input signal thereto the electrical signal; and
  - a processing circuit that processes an output from the waveform equalizer,
  - wherein
    - the waveform equalizer is the waveform equalizer of one of claims 1 to 3,
    - and
    - the information reproducing apparatus further comprises a controller
      - that sets the boost factor and
      - that sets whichever of the conductances of the first and second conductance amplifiers is made variable.